EPA NO. U590002

FILE NO. L1-18

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

SDMS Document ID
2118798

AUG 2 2000

Ref: 8ENF-T

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Faxed and Mailed

Mr. David Suhr
Idle Properties Manager
Hecla Mining Company
6500 Mineral Drive
Coeur d'Alene, ID 83815-8788

Re: Comments on Soil Sampling and Analysis Work Plan and Leachate and Run-Off Sampling and analysis Work Plan

Dear Mr. Suhr:

On September 22, 1999, EPA issued Hecla Mining Company an Order Requiring Monitoring, Testing, Analysis and Reporting pursuant to Section 3013 of RCRA. This Order required development and submittal of work plans, pursuant to Paragraphs 60 and 61 of the Order which required the following:

> Each Work Plan ... shall be designed to define the nature, location, extent, direction and rate of movement of any hazardous wastes or hazardous constituents which are present at or have been released from the facility. Each work plan shall document the procedures the Respondent shall use to conduct the investigations necessary: (1) to characterize the potential pathways of migration of hazardous waste and hazardous constituents; (2) characterize the sources of hazardous waste and/or hazardous constituent contamination; (3) define the degree and extent of hazardous waste and/or hazardous constituent contamination; and (4) identify actual or potential receptors.

Enclosed please find the Agency's comments on these work plans. Additionally, we solicited and obtained comments from the Bureau of Indian Affairs (BIA), who acts as the trustee for tribal lands, including the leased lands on which your waste pond is situated. The BIA comments have been incorporated into EPA's comments. All comments must be addressed completely in the redraft of your work plans.

Printed on Recycled Paper

Z 152 740 878

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail *(See reverse)*

Sent to	MR DAVID SUHR
Street & Nu	IDLE PROPERTIES MANAGER
Post Office,	HECLA MINING COMPANY
Postage	6500 MINERAL DRIVE
Certified Fe	COEUR D'ALENE ID 83815-8788
Special Del	
Restricted I	
Return Rec Whom & D	
Return Recei Date, & Addr	
TOTAL Po	
Postmark c	

PS Form **3800**, April 1995

As required by Paragraph 69 of the 3013 Order, please modify the work plans and resubmit them within thirty (30) days to the attention of Linda Jacobson, EPA's designated Project Coordinator

Also provide copies of the work plans to the following Tribal and BIA representatives:

Glen Rogers, Chairman
Shivwits Band of Paiute Indian Tribe
P.O. Box 448
Santa Clara, UT 84765

John Krause
Bureau of Indian Affairs Phoenix Area Office
U.S. Department of Interior
P.O. Box 10
Phoenix, AZ 85001

Effie Delmar, Rangeland Management Specialist
BIA Southern Paiute Field Station, Branch of Natural Resources
P.O. Box 720
St. George, UT 84771

Pursuant to Paragraph 74 of the 3013 Order, Hecla was directed to designate a Project Coordinator within ten (10) days of the effective date of the Order. Please notify Ms. Jacobson via written correspondence of whom Hecla has designated, including his or her name, address, and telephone number.

Please contact Linda Jacobson of my staff if you have questions or require clarification. Ms. Jacobson can be reached at (303) 312-6503.

Sincerely,

Sharon L. Kercher, Director
Technical Enforcement Program

Enclosures

cc: Glen Rogers, Tribal Chairman
Shivwits Band of Paiute Indian Tribe
Effie Delmar, BIA Southern Paiute Field Station
John Krause, BIA Phoenix Area
Sue Groves, EPA-TAP

Comments on the Soil Sampling
and Analysis Work Plan and the
Leachate and Runoff Work Plan

General Comments

The following General Comments are applicable to the Soil Sampling and Leachate and Runoff Work Plans. Both work plans must be modified to address the changes noted in these general comments. Specific comments on each work plan follow.

1. To understand the Pond 2 waste cell, please expand the text to include topographical information, cell depths, liner type, and waste zone configuration. We understand that Pond 2 is round, approximately 500 feet in diameter, 30 feet deep, the periphery built up five feet, "in a centerline manner", and maintains different types of waste.

2. Amounts and sources of the material generated and placed into Pond 2, the cap placed on Pond 2, seepage locations near Pond 2, and the diversion ditch, need to be more thoroughly explained in order to have sufficient rationale for sampling locations and numbers and to ensure the work plans are stand-alone documents.

3. The work plans do not provide procedures to document and characterize the potential pathways of migration of hazardous waste and hazardous constituents.

   The Soil Sampling Work Plan does not include any rationale or sampling to determine whether the liner is leaking and a migration pathway exists below the liner. Sufficient piezometers or wells and associated soils and ground water sampling adjacent to Pond 2 are necessary to determine groundwater flow direction, contaminant lateral and vertical movement, and vertical movement below the liner.

   The Leachate and Run-Off Work Plan does not include all areas onsite and offsite that historically received or currently receive leachate or run-off from the site, including the stormwater catchment basin ("the stock watering pond") located on non-leased tribal land. Additional samples of these areas, including the stock watering pond water and sediments, are needed and should be proposed in the work plan redraft.

4. The plan does not discuss the potential for the discovery of saturated conditions within the waste cell. The work plans must be amended to address the collection and analytical protocol to be followed when multi-phase samples or saturated zones are encountered.

5. The desired plan outcome should include surveyed sampling locations with one-foot minimum contour accuracy shown on site plan(s) and cross-sections.

6. The work plans should address Pond 2 and the associated surrounding and subsurface areas and all areas which have received runoff or leachate currently or historically, including the stock watering pond.

7. Hecla Mining Company (Hecla) must collect and analyze samples in accordance with EPA-approved methods identified and described in EPA Document SW-846 methods, December 1996, or, if approved in writing by EPA, equivalent methods or more current versions of SW-846. The SPLP cannot be used for waste determination.

8. Investigation-derived wastes including personal protective equipment, soil corings and cuttings, excess samples, decontamination materials and waste should be placed in containers, characterized and transported to an acceptable, permitted facility for disposal or treatment

9. The work plans do not identify actual or potential receptors as required by Paragraph 61 of the Order. The scope of the work plans must be expanded to identify receptors.

10. The work plans must identify the laboratories to be used for analyses and ensure that the laboratory(ies) meet Utah certification requirements for all parameters to be analyzed.

11. A certified geologist must be present to log all boreholes, wells, and piezometers (See attached sample borehole log form).

12. Hand tools or hand or drill augering for soil sample collection are the only methods to be employed. Delete the language regarding trench excavation and backhoeing.

Specific Comments on the Soil Sampling and Analysis Work Plan:

1. Page 1, First Paragraph, First, Second and Third Sentences: Pond 2 is better described as being a waste disposal facility utilized for the disposal of chemical and mineral processing wastes, including laboratory wastes, from 1984 to 1995. Pond 2 was originally a tailings impoundment used by St. George Mining Company (SGMC). Pond 2 was subsequently employed for disposal of all wastes generated during the consolidation of all pond wastes, contaminated soils, unmilled ore, and wastes from the cobalt sulfate manufacturing, including lab wastes, as part of the sales agreement with OMG, Americas. If further information exists, regarding the physical characteristics of the liner and the dimensions of the disposal cell, it should be provided in the text.

2. Page 1, Section 1.0, Introduction, revise text to indicate that Pond 2 is lined with a "blown asphalt liner" installed in approximately 1984. The condition of the liner is unknown. The work plan should be expanded to include measures to evaluate the liner condition.

3. Page 1, Section 1.1, second paragraph, second sentence, amend the text to read: "The field investigation described by this Work Plan is submitted per the requirements of the Order to characterize the soils and other solid materials associated with Pond 2 to determine the nature and extent of any soil contamination in and around the Wastepile, for metals, solvents and other organics, radioactive materials, and other constituents likely present in the waste material."

4. Page 1, Section 1.1, Second Paragraph, Second Sentence: The use of the word representative should be deleted.

5. Page 2, Section 1.2, First Paragraph: The relationship between Pond 2, and the other ponds is not clear. Are Ponds 2A and 2B components of the existing Pond 2?

6 Page 2, Section 1.2, Second Paragraph: Please expand the text to discuss the use of all ponds by Hecla from 1989 to 1995, not merely Pond 2.

7. Page 2, Section 1.2, Second Full Paragraph, Second Sentence: Please provide a reference and further description of the "soil cleanup standards established by the State of Utah." Please note the facility is located on tribal leased lands and contained fully within the exterior boundaries of the reservation.

8. Page 2, Section 1.2, Second Full Paragraph: Please provide a description or estimate of the amounts and types of wastes present in each pond prior to consolidation, a description of the amount of wastes excavated from current OMG leased property, a description of the cleanup plan and location and size of the ore stockpile, and an explanation of the liner types disposed of in Pond 2. This information may be included as an attachment.

9. Page 2, Section 1.2, Second Full Paragraph, First Sentence: After OMG, Americas, Inc., insert: "with the exception of the 8.28 acres retained by Hecla as a result of an

Amendment to the Lease with Shivwits Band of Paiutes on September 25, 1995 which includes Pond 2."

10. Page 2, Section 1.2, Third Paragraph, Last Sentence: Please clarify in the text the meaning of "in a centerline manner".

11. Page 2, Section 1.2, Fourth Paragraph: Delete this paragraph. See above comment under, "Page 2, Third Paragraph, First Sentence (Comment 9)".

12. Page 2, Section 1.2, Fifth Paragraph, First Sentence: Please amend the text to read: "Initially, Pond 2 was covered with borrow material in a dome-shaped configuration, with the perimeter fenced (Figure 1)." Please specify the source of the borrow material and any specifications (i.e. permeability and soil type) to which the borrow material adhered. An explanation of the engineering associated with the cap design and placement should be provided.

13. Page 2, Section 1.2, Fifth Paragraph, Second Sentence: Please clarify whether the maximum material thickness includes the cap and the waste material or refers only to the waste material thickness.

14. Page 2, Section 1.2, Fifth Paragraph, Third Sentence: Please provide an explanation of the diversion ditch function including where the flow around the east side of Pond 2 is conveyed.

15. Page 2, Section 1.2, Fifth Paragraph, Fourth Sentence: Please expand the text to include an explanation of the engineering associated with liner design to include capacity and design drawings.

16. Page 2, Section 1.2, Fifth Paragraph, Fifth Sentence: Please describe how Hecla operates and maintains the seepage collection system and evaporation pond. When was the system installed, who performed the design and installed the system, and what operating procedures exist? Has the runoff ever been sampled, and if so, at what frequency? Please provide a summary of all historic runoff data.

17. Page 2, Section 1.2, Fifth Paragraph: A topographical map is necessary to support this discussion.

18. Page 3, Section 1.2: Please expand the text to discuss the structures (ditches, trenches, etc.) constructed to divert, contain, or otherwise manage stormwater flow. Please include the dimensions (width, length, depth) of each structure and when each was constructed.

19. Page 3, Section 1.2: Please expand the text to include a discussion of and figure showing areas historically or currently receiving runoff from the Pond 2 area, ensuring inclusion of the stock watering pond.

20. Page 4, Section 2.1, Objective, First Paragraph, Last Sentence: There is insufficient rationale to conclude that one sampling event is sufficient waste characterization. Please delete this sentence.

21. Page 4, Section 2.1, Second Paragraph: Please expand the text to indicate that SW-846 methods or equivalent methods, as approved in writing by EPA, will be employed.

22. Page 4, Section 2.2, Third Paragraph: Rationale for the sample number and location must be provided.

23. Page 4, Section 2.2, Last Paragraph, First Sentence: The word "primary" is not necessary and should be deleted.

24. Page 4, Section 2.2, Last Paragraph, Last Sentence: Please define what is meant by a representative sample. The text should also discuss how the sampling will be conducted to produce a minimum of five representative samples and discuss how many samples will be taken at each location, and at what depths.

25. Page 4, Section 2.2, Last Paragraph: Please expand the text to include an item (6) for petroleum contaminated soils as alluded to on Page 2. For the "neutralized waste", please specify whether the waste was treated with acid or caustic. The amounts of each waste type listed in this paragraph as well as their origins should be discussed in the text.

26. Page 5, Section 2.2: Expand the text to indicate that all samples will be collected by hand methods or by hand or drill augering. All sample locations should be surveyed. The locations for samples within or close to Pond 2 are to be collected as shown on the amended figure, attached to these comments. New locations and a new figure for background samples must be proposed and submitted. A minimum of one sample should be collected from each five foot vertical zone for characterization within Pond 2. Additional samples within each five foot zone may be necessary based on waste heterogeneity, field instrument screening, visual staining, or request of EPA or EPA's designated representative based on field conditions.

27. Page 5, Section 2.2: Expand the text to include the installation of sufficient piezometers and wells to determine groundwater flow direction, contaminant lateral and vertical movement, and vertical movement below the liner. Wells are to be installed in adherence with EPA's Technical Enforcement Guidance Document.

28. Page 5, Section 2.2, First Paragraph, Last Sentence: Please clarify if these five types of disposed material are stratified or segregated within the pond to allow delineation of each material type. Please provide the rationale on which increased sample type and numbers will be based. Clear sample delineation and rationale for sampling changes must be presented in the sampling plan.

29. Page 5, Section 2.2, Second Paragraph, Third Sentence: How is it estimated that the gallium and germanium layer is 10 to 20 feet thick?

30. Page 5, Section 2.2, Second Paragraph, Last Sentence: Please explain what is meant by the statement that the "drilling will generally be into the gallium and germanium process tailings". Will some excavations or drill holes not reach this layer, and if so, why?

31. Page 5, Section 2.2, Third Paragraph, First Sentence and Last Paragraph, First Sentence: The rationale for the number and location of samples and the rationale for increasing sampling locations must be provided. To protect the existing Pond 2 liner and allow definition of the extent of contamination, borings adjacent to the waste pile or angle boring should be considered in selection of sample number and location.

32. Page 5, Section 2.2, Third Paragraph, Third Sentence: The extent of seepage should be determined by the change in metal or other contaminant concentrations as it relates to location and depth. Waste cell contaminant data and background conditions will assist in this analysis.

33. Page 5, Section 2.2, Fourth Paragraph and Page 6, First Paragraph: How will the sampling plan be modified if salt accumulations and saturated conditions exist below two feet?

34. Page 5, Last Paragraph, Last Sentence: The extent of seepage should be determined by the change in metal or other contaminant concentrations as it relates to location and depth. Waste cell contaminant data and background conditions will assist in this analysis.

35. Pages 6 and 7, Section 2.3: Hand methods or hand or drill augering for soil sample collection are the only methods to be employed. Delete the language regarding trench excavation and backhoeing. The holes must be logged by a certified geologist.

36. Pages 6 and 7, Section 2.3: Amend the text to indicate that all investigation derived wastes will be containerized, characterized, and disposed appropriately.

37. Page 6, Section 2.2, Second Paragraph: Due to the movement of waste throughout the Site, the assumption of background conditions at 0 to 4 inches in the area of Pond 2 is suspect. Background locations should be conducted off of the disturbed 180-acre parcel in a pristine area. The Contractor will be required to obtain appropriate clearances (i.e., cultural resource survey and authorization) prior to this activity.

38. Page 7, Section 2.3, Drilling, Second Paragraph: Boreholes shall be closed in adherence to the requirements of the State of Utah Engineer's office.

39. Page 7, Section 2.3, Decontamination: Augers and other sampling equipment shall be cleaned between sample locations at an established decontamination station and decontamination fluids and other decontamination wastes appropriately containerized. Decontamination may not occur on areas being sampled. A separate decontamination area

should be constructed and all decontamination materials properly containerized, characterized, and disposed.

40. Page 8, Section 2.4, First Paragraph: It is recommended that a full suite of metals as listed in 40 CFR Part 258 Appendices I and II be initially analyzed and evaluated.

41. Page 8, Section 2.4, Last Paragraph: Samples not analyzed and decontamination materials and waste should be placed in containers, characterized and transported to an acceptable, permitted facility.

42. Page 8, Section 2.4: Please specify the laboratory(ies) to be used and ensure the laboratories meet Utah certification criteria for the parameters to be analyzed and methods to be employed.

43. Page 8, Section 2.4, Third Paragraph: Total metals, TCLP metals and organics, VOAs, SVOAs, pH and radiation are to be run for all collected samples, in addition to the parameters specified in Comment 40.

44. Page 8, Section 2.4: Expand the text to include performance of physical analyses on selected soil samples which represent the waste types or soil lithologies encountered during the characterization, including background sample collection. These analyses will be conducted to evaluate transport mechanisms. These analyses include 1) grain size analysis, using ASTM Method D422-63, 2) total organic carbon using EPA Method 9060 Modified, 3) moisture content, 4) cation exchange capacity using EPA Method 9081, and 5) bulk density using ASTM Method D1188.

45. Page 9: It is proposed to collect one rinse blank of soil sampling equipment per 20 primary samples collected. If less than 20 samples are collected, at least one rinse blank will be collected per media type.

46. Page 10, Section 3.0: The text should be expanded to discuss how the planned work will define the direction and rate of movement of released hazardous waste or hazardous constituents. The work plan should be revised to include the installation of sufficient piezometers and one or more groundwater wells adjacent to Pond 2 to define the direction and magnitude of contaminant movement and the direction and velocity of groundwater flow through water level, contaminant level, and conductivity measurements.

47. Page 12: The Table should be amended to reflect that, in addition to the parameters and methods listed, all samples will be analyzed for TCLP organics and metals, total, semi-volatile and volatile organic analysis, radiation, pH, and the additional list of parameters specified in Comment 40. Additionally, a subset of soil samples will be evaluated for physical parameters, as listed in Comment 44. The SPLP method is not acceptable for this characterization work.

48. Figure 1: The redraft of the work plan must include a revised figure which includes additional samples and distinguishes which of these are background samples.

49. Attachment A, A-4, Section A.3.3, First Paragraph: Add the sampler's name to the list of sample requirements.

50. Attachment A, A-5, Section A.3.5.2: Please explain what is meant by "samples collected at the site for use as spiked samples."

51. Attachment A, Section A.3.5.4, QC Sampling Frequency: Please amend the text to indicate that if less than 20 samples of each media are collected, a minimum of one field duplicate, one field blank and one field rinsate will be collected for water samples and a minimum of one field rinsate will be collected for each soil or solid media type.

52. Attachment B, B-4, Site Description and Background: Please amend the text to reflect the modifications requested in Specific Comments 1, 2, 18, and 19 listed above.

53. Attachment C, SOP Number 3: Please delete the sections pertaining to trenching activity. Hand sampling or hand or drill augering are the preferred methods. For surface sampling, please adhere to the following: Prior to surface sampling, remove all surface materials that are not to be included in the sample such as rocks, twigs, and leaves. For sample collection taken within the upper two to three feet, use a shovel or trowel. A hand auger may be used for depths of up to 10 feet. When using the hand auger, auger the hole to the required depth, then slowly remove the auger and collect the soil sample from the auger flight or auger bucket at the point corresponding to the required depth. A tube sampler can be attached to the auger rods after augering to the desired depth, inserted into the open borehole, and then advanced into the soil at the base of the boring. If sampling is in sandy or non-cohesive soil, a shovel may be necessary to collect samples. Log the samples. For deeper samples, drill augering is necessary.

54. Attachment C, SOP Number 3, Section 5.0: Please photograph the sample collection and specific geologic features. A scale or item providing a size perspective should be placed in each photograph. The frame number and picture location should also be documented in the field logbook.

55. Attachment C, SOP Number 4, Page 2, Section 4.1: Please explain and locate on a figure the "closed sump" into which the decontamination wash and rinse water was proposed to be drained.

56. Attachment C, SOP Number 5, Section 4.5, Bullet 6: Amend the text to read: "Do not let any samples stand in the sun. Store them in coolers with ice."

57. Attachment C, SOP Number 5, Page 10, Table 1: Amend the text to ensure that sample containers and preservative methods, and holding times listed are consistent with SW-846 methods. Add additional methods, containers, and preservatives for the physical soil property analysis (grain size, moisture content, bulk density, etc.).

58. Please ensure that all field equipment is initially calibrated properly and recalibrated at appropriate frequencies. Please reflect this in the appropriate section of the work plan.

Leachate and Run-Off Sampling and Analysis Work Plan
Specific Comments

1. The language of the Leachate and Run-Off Sampling and Analysis Work Plan must be modified to address EPA's Specific Comments 1 - 7 and 17 - 23 on the Soil Sampling and Analysis Work Plan, listed above in their entirety.

2. Page 2, Last Paragraph, Second Sentence: Please include in the text a description of where the diversion ditch conveys flow around the east side of Pond 2.

3. Page 2, Last Paragraph, Third Sentence: Amend the text to read "evaporation pond system."

4. Page 2, Last Paragraph: When was a second evaporation pond built? Please expand the text to describe the dimensions and construction materials of the evaporation ponds and trench.

5. Page 3, Section 2.2, Second Sentence: Delete "if flow is present". Add a new sentence at the end of the second sentence which will read: "Small holes will be dug in the seep area, liquid will be allowed to pool, and samples will be collected."

6. Page 4, Section 2.4: Please discuss the purpose of the turbidity measurement and employ a properly calibrated field instrument rather than "visual estimation".

7. Page 7: Add analyses for ammonia, nitrate, TSS, nitrate as nitrogen, and include analysis of semi-volatile organics and volatile organics, using SW-846 methods 8260B and 8270C, respectively, analysis for total metals using 6010B, 7196A for Hexavalent chromium, 7470A for mercury, and 7740 for selenium, and RCRA TCLP metals and organics.

8. Figure 1: Please amend the figure to relocate the samples as drawn on the attached Figure.

9. Figure 1: Distinguish which water and soil samples are being proposed to be collected as "background" samples.

10. Figure 1: Include additional samples for ditch drainage areas leading to the stock watering pond and samples for the pond water and sediment. If there is flow in the stock watering pond outfall during sample collection, a sample of the outfall will be collected.

11. Attachment A, A-4, Section A.3.3, First Paragraph: Add sampler's name to the list of sample requirements.

12. Attachment A, A-5, Section A.3.5.2: Please explain what is meant by "samples collected at the site for use as spiked samples".

13. Attachment A, Section A.3.5.4, QC Sampling Frequency: Please amend the text to indicate that if less than 20 samples of each media are collected, a minimum of one field duplicate, one field blank and one field rinsate will be collected for water samples.

14. Attachment C, SOP Number 1, Surface Water Sample Collecting: Please add a procedure for collecting leachate: a) Dig hole in area of moistness; b) allow time for water to collect and solids to settle out; c) collect samples; d) fill in hole.

15. Attachment C, SOP Number 1, Section 5.1.3, pH Measurements, Fourth Bullet: Amend the text to read "measure the PH of samples within 15 minutes of time after sampling and on a separate aliquot of the sample".

16. Attachment C, SOP Number 2, Section 5.0: Please photograph the sample collection. A scale or item providing a size perspective should be placed in each photograph. The frame number and picture location should also be documented in the field logbook.

17. Attachment C, SOP Number 4, Page 2, Section 4.1: Please explain and locate on a Figure the "closed sump" into which decontamination wash and rinse water was proposed to be drained.

18. Attachment C, SOP Number 5, Section 4.5, Bullet 6: Amend the text to read: "Do not let any samples stand in the sun. Store them in coolers with ice."

19. Attachment C, SOP Number 5, Page 10, Table 1: Amend the text to reflect sample containers and preservative methods, and holding times consistent with SW-846 methods.
    Add: Ammonia
    Nitrate
    Nitrate as Nitrite

20. Please ensure that all field equipment is initially calibrated properly and recalibrated at appropriate frequencies. Please reflect this in the appropriate section of the work plan.

****
*** TX REPORT ***
****

TRANSMISSION OK

TX/RX NO	2818
CONNECTION TEL	82087694122
SUBADDRESS	
CONNECTION ID	HECLA MINING
ST. TIME	08/02 14:47
USAGE T	07'57
PGS.	13
RESULT	OK

facsimile TRANSMITTAL

Name: David Suhr

Organization: Hecla Mining Company

Fax: (208) 769-4122

Phone: (208) 769-4197

From: Linda Jacobson

Phone: (303) 312-6503

Organization: Environmental Protection Agency
Region 8
999 18th Street Suite 500
Denver, CO 80202-2466

Date: 8/2/00

Fax: 303-312-6409

Subject: Work Plan Comments

Pages (Including cover sheet): 13

facsimile
TRANSMITTAL

Name: David Suhr

Organization: Hecla Mining Company

Fax: (208) 769-4122

Phone: (208) 769-4197

From: Linda Jacobson

Phone: (303) 312-6503

Organization: Environmental Protection Agency
Region 8
999 18th Street Suite 500
Denver, CO 80202-2466

Date: 8/2/00

Fax: 303-312-6409

Subject: Work Plan Comments

Pages (Including cover sheet): 13

Comments:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 500
DENVER, CO 80202-2466

AUG 2 2000

Ref: 8ENF-T

CONCURRENCE COPY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Faxed and Mailed

Mr. David Suhr
Idle Properties Manager
Hecla Mining Company
6500 Mineral Drive
Coeur d'Alene, ID 83815-8788

Re: Comments on Soil Sampling and Analysis Work Plan and Leachate and Run-Off Sampling and analysis Work Plan

Dear Mr. Suhr:

On September 22, 1999, EPA issued Hecla Mining Company an Order Requiring Monitoring, Testing, Analysis and Reporting pursuant to Section 3013 of RCRA. This Order required development and submittal of work plans, pursuant to Paragraphs 60 and 61 of the Order which required the following:

> Each Work Plan ... shall be designed to define the nature, location, extent, direction and rate of movement of any hazardous wastes or hazardous constituents which are present at or have been released from the facility. Each work plan shall document the procedures the Respondent shall use to conduct the investigations necessary: (1) to characterize the potential pathways of migration of hazardous waste and hazardous constituents; (2) characterize the sources of hazardous waste and/or hazardous constituent contamination; (3) define the degree and extent of hazardous waste and/or hazardous constituent contamination; and (4) identify actual or potential receptors.

Enclosed please find the Agency's comments on these work plans. Additionally, we solicited and obtained comments from the Bureau of Indian Affairs (BIA), who acts as the trustee for tribal lands, including the leased lands on which your waste pond is situated. The BIA comments have been incorporated into EPA's comments. All comments must be addressed completely in the redraft of your work plans.

Linda Jacobson
8ENF-T
8/1/00

Printed on Recycled Paper

As required by Paragraph 69 of the 3013 Order, please modify the work plans and resubmit them within thirty (30) days to the attention of Linda Jacobson, EPA's designated Project Coordinator

Also provide copies of the work plans to the following Tribal and BIA representatives:

Glen Rogers, Chairman
Shivwits Band of Paiute Indian Tribe
P.O. Box 448
Santa Clara, UT 84765

John Krause
Bureau of Indian Affairs Phoenix Area Office
U.S. Department of Interior
P.O. Box 10
Phoenix, AZ 85001

Effie Delmar, Rangeland Management Specialist
BIA Southern Paiute Field Station, Branch of Natural Resources
P.O. Box 720
St. George, UT 84771

Pursuant to Paragraph 74 of the 3013 Order, Hecla was directed to designate a Project Coordinator within ten (10) days of the effective date of the Order. Please notify Ms. Jacobson via written correspondence of whom Hecla has designated, including his or her name, address, and telephone number.

Please contact Linda Jacobson of my staff if you have questions or require clarification. Ms. Jacobson can be reached at (303) 312-6503.

Sincerely,

Sharon L. Kercher, Director
Technical Enforcement Program

Enclosures

cc: Glen Rogers, Tribal Chairman
Shivwits Band of Paiute Indian Tribe
Effie Delmar, BIA Southern Paiute Field Station
John Krause, BIA Phoenix Area
Sue Groves, EPA-TAP

bcc: Lauren Buehler, EPA-LEP
Linda Jacobson, EPA-TEP
Donna Inman, EPA-TEP

Comments on the Soil Sampling
and Analysis Work Plan and the
Leachate and Runoff Work Plan

General Comments

The following General Comments are applicable to the Soil Sampling and Leachate and Runoff Work Plans. Both work plans must be modified to address the changes noted in these general comments. Specific comments on each work plan follow.

1. To understand the Pond 2 waste cell, please expand the text to include topographical information, cell depths, liner type, and waste zone configuration. We understand that Pond 2 is round, approximately 500 feet in diameter, 30 feet deep, the periphery built up five feet, "in a centerline manner", and maintains different types of waste.

2. Amounts and sources of the material generated and placed into Pond 2, the cap placed on Pond 2, seepage locations near Pond 2, and the diversion ditch, need to be more thoroughly explained in order to have sufficient rationale for sampling locations and numbers and to ensure the work plans are stand-alone documents.

3. The work plans do not provide procedures to document and characterize the potential pathways of migration of hazardous waste and hazardous constituents.

   The Soil Sampling Work Plan does not include any rationale or sampling to determine whether the liner is leaking and a migration pathway exists below the liner. Sufficient piezometers or wells and associated soils and ground water sampling adjacent to Pond 2 are necessary to determine groundwater flow direction, contaminant lateral and vertical movement, and vertical movement below the liner.

   The Leachate and Run-Off Work Plan does not include all areas onsite and offsite that historically received or currently receive leachate or run-off from the site, including the stormwater catchment basin ("the stock watering pond") located on non-leased tribal land. Additional samples of these areas, including the stock watering pond water and sediments, are needed and should be proposed in the work plan redraft.

4. The plan does not discuss the potential for the discovery of saturated conditions within the waste cell. The work plans must be amended to address the collection and analytical protocol to be followed when multi-phase samples or saturated zones are encountered.

5. The desired plan outcome should include surveyed sampling locations with one-foot minimum contour accuracy shown on site plan(s) and cross-sections.

6. The work plans should address Pond 2 and the associated surrounding and subsurface areas and all areas which have received runoff or leachate currently or historically, including the stock watering pond.

7. Hecla Mining Company (Hecla) must collect and analyze samples in accordance with EPA-approved methods identified and described in EPA Document SW-846 methods, December 1996, or, if approved in writing by EPA, equivalent methods or more current versions of SW-846. The SPLP cannot be used for waste determination.

8. Investigation-derived wastes including personal protective equipment, soil corings and cuttings, excess samples, decontamination materials and waste should be placed in containers, characterized and transported to an acceptable, permitted facility for disposal or treatment

9. The work plans do not identify actual or potential receptors as required by Paragraph 61 of the Order. The scope of the work plans must be expanded to identify receptors.

10. The work plans must identify the laboratories to be used for analyses and ensure that the laboratory(ies) meet Utah certification requirements for all parameters to be analyzed.

11. A certified geologist must be present to log all boreholes, wells, and piezometers (See attached sample borehole log form).

12. Hand tools or hand or drill augering for soil sample collection are the only methods to be employed. Delete the language regarding trench excavation and backhoeing.

Specific Comments on the Soil Sampling and Analysis Work Plan:

1. Page 1, First Paragraph, First, Second and Third Sentences: Pond 2 is better described as being a waste disposal facility utilized for the disposal of chemical and mineral processing wastes, including laboratory wastes, from 1984 to 1995. Pond 2 was originally a tailings impoundment used by St. George Mining Company (SGMC). Pond 2 was subsequently employed for disposal of all wastes generated during the consolidation of all pond wastes, contaminated soils, unmilled ore, and wastes from the cobalt sulfate manufacturing, including lab wastes, as part of the sales agreement with OMG, Americas. If further information exists, regarding the physical characteristics of the liner and the dimensions of the disposal cell, it should be provided in the text.

2. Page 1, Section 1.0, Introduction, revise text to indicate that Pond 2 is lined with a "blown asphalt liner" installed in approximately 1984. The condition of the liner is unknown. The work plan should be expanded to include measures to evaluate the liner condition.

3. Page 1, Section 1.1, second paragraph, second sentence, amend the text to read: "The field investigation described by this Work Plan is submitted per the requirements of the Order to characterize the soils and other solid materials associated with Pond 2 to determine the nature and extent of any soil contamination in and around the Wastepile, for metals, solvents and other organics, radioactive materials, and other constituents likely present in the waste material."

4. Page 1, Section 1.1, Second Paragraph, Second Sentence: The use of the word representative should be deleted.

5. Page 2, Section 1.2, First Paragraph: The relationship between Pond 2, and the other ponds is not clear. Are Ponds 2A and 2B components of the existing Pond 2?

6 Page 2, Section 1.2, Second Paragraph: Please expand the text to discuss the use of all ponds by Hecla from 1989 to 1995, not merely Pond 2.

7. Page 2, Section 1.2, Second Full Paragraph, Second Sentence: Please provide a reference and further description of the "soil cleanup standards established by the State of Utah." Please note the facility is located on tribal leased lands and contained fully within the exterior boundaries of the reservation.

8. Page 2, Section 1.2, Second Full Paragraph: Please provide a description or estimate of the amounts and types of wastes present in each pond prior to consolidation, a description of the amount of wastes excavated from current OMG leased property, a description of the cleanup plan and location and size of the ore stockpile, and an explanation of the liner types disposed of in Pond 2. This information may be included as an attachment.

9. Page 2, Section 1.2, Second Full Paragraph, First Sentence: After OMG, Americas, Inc., insert: "with the exception of the 8.28 acres retained by Hecla as a result of an

Amendment to the Lease with Shivwits Band of Paiutes on September 25, 1995 which includes Pond 2."

10. Page 2, Section 1.2, Third Paragraph, Last Sentence: Please clarify in the text the meaning of "in a centerline manner".

11. Page 2, Section 1.2, Fourth Paragraph: Delete this paragraph. See above comment under, "Page 2, Third Paragraph, First Sentence (Comment 9)".

12. Page 2, Section 1.2, Fifth Paragraph, First Sentence: Please amend the text to read: "Initially, Pond 2 was covered with borrow material in a dome-shaped configuration, with the perimeter fenced (Figure 1)." Please specify the source of the borrow material and any specifications (i.e. permeability and soil type) to which the borrow material adhered. An explanation of the engineering associated with the cap design and placement should be provided.

13. Page 2, Section 1.2, Fifth Paragraph, Second Sentence: Please clarify whether the maximum material thickness includes the cap and the waste material or refers only to the waste material thickness.

14. Page 2, Section 1.2, Fifth Paragraph, Third Sentence: Please provide an explanation of the diversion ditch function including where the flow around the east side of Pond 2 is conveyed.

15. Page 2, Section 1.2, Fifth Paragraph, Fourth Sentence: Please expand the text to include an explanation of the engineering associated with liner design to include capacity and design drawings.

16. Page 2, Section 1.2, Fifth Paragraph, Fifth Sentence: Please describe how Hecla operates and maintains the seepage collection system and evaporation pond. When was the system installed, who performed the design and installed the system, and what operating procedures exist? Has the runoff ever been sampled, and if so, at what frequency? Please provide a summary of all historic runoff data.

17. Page 2, Section 1.2, Fifth Paragraph: A topographical map is necessary to support this discussion.

18.. Page 3, Section 1.2: Please expand the text to discuss the structures (ditches, trenches, etc.) constructed to divert, contain, or otherwise manage stormwater flow. Please include the dimensions (width, length, depth) of each structure and when each was constructed.

19. Page 3, Section 1.2: Please expand the text to include a discussion of and figure showing areas historically or currently receiving runoff from the Pond 2 area, ensuring inclusion of the stock watering pond.

20. Page 4, Section 2.1, Objective, First Paragraph, Last Sentence: There is insufficient rationale to conclude that one sampling event is sufficient waste characterization. Please delete this sentence.

21. Page 4, Section 2.1, Second Paragraph: Please expand the text to indicate that SW-846 methods or equivalent methods, as approved in writing by EPA, will be employed.

22. Page 4, Section 2.2, Third Paragraph: Rationale for the sample number and location must be provided.

23. Page 4, Section 2.2, Last Paragraph, First Sentence: The word "primary" is not necessary and should be deleted.

24. Page 4, Section 2.2, Last Paragraph, Last Sentence: Please define what is meant by a representative sample. The text should also discuss how the sampling will be conducted to produce a minimum of five representative samples and discuss how many samples will be taken at each location, and at what depths.

25. Page 4, Section 2.2, Last Paragraph: Please expand the text to include an item (6) for petroleum contaminated soils as alluded to on Page 2. For the "neutralized waste", please specify whether the waste was treated with acid or caustic. The amounts of each waste type listed in this paragraph as well as their origins should be discussed in the text.

26. Page 5, Section 2.2: Expand the text to indicate that all samples will be collected by hand methods or by hand or drill augering. All sample locations should be surveyed. The locations for samples within or close to Pond 2 are to be collected as shown on the amended figure, attached to these comments. New locations and a new figure for background samples must be proposed and submitted. A minimum of one sample should be collected from each five foot vertical zone for characterization within Pond 2. Additional samples within each five foot zone may be necessary based on waste heterogeneity, field instrument screening, visual staining, or request of EPA or EPA's designated representative based on field conditions.

27. Page 5, Section 2.2: Expand the text to include the installation of sufficient piezometers and wells to determine groundwater flow direction, contaminant lateral and vertical movement, and vertical movement below the liner. Wells are to be installed in adherence with EPA's Technical Enforcement Guidance Document.

28. Page 5, Section 2.2, First Paragraph, Last Sentence: Please clarify if these five types of disposed material are stratified or segregated within the pond to allow delineation of each material type. Please provide the rationale on which increased sample type and numbers will be based. Clear sample delineation and rationale for sampling changes must be presented in the sampling plan.

29. Page 5, Section 2.2, Second Paragraph, Third Sentence: How is it estimated that the gallium and germanium layer is 10 to 20 feet thick?

30. Page 5, Section 2.2, Second Paragraph, Last Sentence: Please explain what is meant by the statement that the "drilling will generally be into the gallium and germanium process tailings". Will some excavations or drill holes not reach this layer, and if so, why?

31. Page 5, Section 2.2, Third Paragraph, First Sentence and Last Paragraph, First Sentence: The rationale for the number and location of samples and the rationale for increasing sampling locations must be provided. To protect the existing Pond 2 liner and allow definition of the extent of contamination, borings adjacent to the waste pile or angle boring should be considered in selection of sample number and location.

32. Page 5, Section 2.2, Third Paragraph, Third Sentence: The extent of seepage should be determined by the change in metal or other contaminant concentrations as it relates to location and depth. Waste cell contaminant data and background conditions will assist in this analysis.

33. Page 5, Section 2.2, Fourth Paragraph and Page 6, First Paragraph: How will the sampling plan be modified if salt accumulations and saturated conditions exist below two feet?

34. Page 5, Last Paragraph, Last Sentence: The extent of seepage should be determined by the change in metal or other contaminant concentrations as it relates to location and depth. Waste cell contaminant data and background conditions will assist in this analysis.

35. Pages 6 and 7, Section 2.3: Hand methods or hand or drill augering for soil sample collection are the only methods to be employed. Delete the language regarding trench excavation and backhoeing. The holes must be logged by a certified geologist.

36. Pages 6 and 7, Section 2.3: Amend the text to indicate that all investigation derived wastes will be containerized, characterized, and disposed appropriately.

37. Page 6, Section 2.2, Second Paragraph: Due to the movement of waste throughout the Site, the assumption of background conditions at 0 to 4 inches in the area of Pond 2 is suspect. Background locations should be conducted off of the disturbed 180-acre parcel in a pristine area. The Contractor will be required to obtain appropriate clearances (i.e., cultural resource survey and authorization) prior to this activity.

38. Page 7, Section 2.3, Drilling, Second Paragraph: Boreholes shall be closed in adherence to the requirements of the State of Utah Engineer's office.

39. Page 7, Section 2.3, Decontamination: Augers and other sampling equipment shall be cleaned between sample locations at an established decontamination station and decontamination fluids and other decontamination wastes appropriately containerized. Decontamination may not occur on areas being sampled. A separate decontamination area

should be constructed and all decontamination materials properly containerized, characterized, and disposed.

40. Page 8, Section 2.4, First Paragraph: It is recommended that a full suite of metals as listed in 40 CFR Part 258 Appendices I and II be initially analyzed and evaluated.

41. Page 8, Section 2.4, Last Paragraph: Samples not analyzed and decontamination materials and waste should be placed in containers, characterized and transported to an acceptable, permitted facility.

42. Page 8, Section 2.4: Please specify the laboratory(ies) to be used and ensure the laboratories meet Utah certification criteria for the parameters to be analyzed and methods to be employed.

43. Page 8, Section 2.4, Third Paragraph: Total metals, TCLP metals and organics, VOAs, SVOAs, pH and radiation are to be run for all collected samples, in addition to the parameters specified in Comment 40.

44. Page 8, Section 2.4: Expand the text to include performance of physical analyses on selected soil samples which represent the waste types or soil lithologies encountered during the characterization, including background sample collection. These analyses will be conducted to evaluate transport mechanisms. These analyses include 1) grain size analysis, using ASTM Method D422-63, 2) total organic carbon using EPA Method 9060 Modified, 3) moisture content, 4) cation exchange capacity using EPA Method 9081, and 5) bulk density using ASTM Method D1188.

45. Page 9: It is proposed to collect one rinse blank of soil sampling equipment per 20 primary samples collected. If less than 20 samples are collected, at least one rinse blank will be collected per media type.

46. Page 10, Section 3.0: The text should be expanded to discuss how the planned work will define the direction and rate of movement of released hazardous waste or hazardous constituents. The work plan should be revised to include the installation of sufficient piezometers and one or more groundwater wells adjacent to Pond 2 to define the direction and magnitude of contaminant movement and the direction and velocity of groundwater flow through water level, contaminant level, and conductivity measurements.

47. Page 12: The Table should be amended to reflect that, in addition to the parameters and methods listed, all samples will be analyzed for TCLP organics and metals, total, semi-volatile and volatile organic analysis, radiation, pH, and the additional list of parameters specified in Comment 40. Additionally, a subset of soil samples will be evaluated for physical parameters, as listed in Comment 44. The SPLP method is not acceptable for this characterization work.

48. Figure 1: The redraft of the work plan must include a revised figure which includes additional samples and distinguishes which of these are background samples.

49. Attachment A, A-4, Section A.3.3, First Paragraph: Add the sampler's name to the list of sample requirements.

50. Attachment A, A-5, Section A.3.5.2: Please explain what is meant by "samples collected at the site for use as spiked samples."

51. Attachment A, Section A.3.5.4, QC Sampling Frequency: Please amend the text to indicate that if less than 20 samples of each media are collected, a minimum of one field duplicate, one field blank and one field rinsate will be collected for water samples and a minimum of one field rinsate will be collected for each soil or solid media type.

52. Attachment B, B-4, Site Description and Background: Please amend the text to reflect the modifications requested in Specific Comments 1, 2, 18, and 19 listed above.

53. Attachment C, SOP Number 3: Please delete the sections pertaining to trenching activity. Hand sampling or hand or drill augering are the preferred methods. For surface sampling, please adhere to the following: Prior to surface sampling, remove all surface materials that are not to be included in the sample such as rocks, twigs, and leaves. For sample collection taken within the upper two to three feet, use a shovel or trowel. A hand auger may be used for depths of up to 10 feet. When using the hand auger, auger the hole to the required depth, then slowly remove the auger and collect the soil sample from the auger flight or auger bucket at the point corresponding to the required depth. A tube sampler can be attached to the auger rods after augering to the desired depth, inserted into the open borehole, and then advanced into the soil at the base of the boring. If sampling is in sandy or non-cohesive soil, a shovel may be necessary to collect samples. Log the samples. For deeper samples, drill augering is necessary.

54. Attachment C, SOP Number 3, Section 5.0: Please photograph the sample collection and specific geologic features. A scale or item providing a size perspective should be placed in each photograph. The frame number and picture location should also be documented in the field logbook.

55. Attachment C, SOP Number 4, Page 2, Section 4.1: Please explain and locate on a figure the "closed sump" into which the decontamination wash and rinse water was proposed to be drained.

56. Attachment C, SOP Number 5, Section 4.5, Bullet 6: Amend the text to read: "Do not let any samples stand in the sun. Store them in coolers with ice."

57. Attachment C, SOP Number 5, Page 10, Table 1: Amend the text to ensure that sample containers and preservative methods, and holding times listed are consistent with SW-846 methods. Add additional methods, containers, and preservatives for the physical soil property analysis (grain size, moisture content, bulk density, etc.).

58. Please ensure that all field equipment is initially calibrated properly and recalibrated at appropriate frequencies. Please reflect this in the appropriate section of the work plan.

Leachate and Run-Off Sampling and Analysis Work Plan
Specific Comments

1. The language of the Leachate and Run-Off Sampling and Analysis Work Plan must be modified to address EPA's Specific Comments 1 - 7 and 17 - 23 on the Soil Sampling and Analysis Work Plan, listed above in their entirety.

2. Page 2, Last Paragraph, Second Sentence: Please include in the text a description of where the diversion ditch conveys flow around the east side of Pond 2.

3. Page 2, Last Paragraph, Third Sentence: Amend the text to read "evaporation pond system."

4. Page 2, Last Paragraph: When was a second evaporation pond built? Please expand the text to describe the dimensions and construction materials of the evaporation ponds and trench.

5. Page 3, Section 2.2, Second Sentence: Delete "if flow is present". Add a new sentence at the end of the second sentence which will read: "Small holes will be dug in the seep area, liquid will be allowed to pool, and samples will be collected."

6. Page 4, Section 2.4: Please discuss the purpose of the turbidity measurement and employ a properly calibrated field instrument rather than "visual estimation".

7. Page 7: Add analyses for ammonia, nitrate, TSS, nitrate as nitrogen, and include analysis of semi-volatile organics and volatile organics, using SW-846 methods 8260B and 8270C, respectively, analysis for total metals using 6010B, 7196A for Hexavalent chromium, 7470A for mercury, and 7740 for selenium, and RCRA TCLP metals and organics.

8. Figure 1: Please amend the figure to relocate the samples as drawn on the attached Figure.

9. Figure 1: Distinguish which water and soil samples are being proposed to be collected as "background" samples.

10. Figure 1: Include additional samples for ditch drainage areas leading to the stock watering pond and samples for the pond water and sediment. If there is flow in the stock watering pond outfall during sample collection, a sample of the outfall will be collected.

11. Attachment A, A-4, Section A.3.3, First Paragraph: Add sampler's name to the list of sample requirements.

12. Attachment A, A-5, Section A.3.5.2: Please explain what is meant by "samples collected at the site for use as spiked samples".

13. Attachment A, Section A.3.5.4, QC Sampling Frequency: Please amend the text to indicate that if less than 20 samples of each media are collected, a minimum of one field duplicate, one field blank and one field rinsate will be collected for water samples.

14. Attachment C, SOP Number 1, Surface Water Sample Collecting: Please add a procedure for collecting leachate: a) Dig hole in area of moistness; b) allow time for water to collect and solids to settle out; c) collect samples; d) fill in hole.

15. Attachment C, SOP Number 1, Section 5.1.3, pH Measurements, Fourth Bullet: Amend the text to read "measure the PH of samples within 15 minutes of time after sampling and on a separate aliquot of the sample".

16. Attachment C, SOP Number 2, Section 5.0: Please photograph the sample collection. A scale or item providing a size perspective should be placed in each photograph. The frame number and picture location should also be documented in the field logbook.

17. Attachment C, SOP Number 4, Page 2, Section 4.1: Please explain and locate on a Figure the "closed sump" into which decontamination wash and rinse water was proposed to be drained.

18. Attachment C, SOP Number 5, Section 4.5, Bullet 6: Amend the text to read: "Do not let any samples stand in the sun. Store them in coolers with ice."

19. Attachment C, SOP Number 5, Page 10, Table 1: Amend the text to reflect sample containers and preservative methods, and holding times consistent with SW-846 methods.
    Add: Ammonia
    Nitrate
    Nitrate as Nitrite

20. Please ensure that all field equipment is initially calibrated properly and recalibrated at appropriate frequencies. Please reflect this in the appropriate section of the work plan.